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ABSTRACT

The success of rehabilitative nursing homes has been measured by their ability to return patients to their homes. The rates of reinstitutionalization after discharge are less studied but are basic to the role of alternative levels of care. This research examines the relationship of predischarge factors with long term outcomes of patients discharged from a rehabilitative nursing home. Participants were non-cancer patients in a Veteran's Administration specialized nursing facility designed to care for patients who require skilled nursing care as opposed to acute hospital care or simply custodial care. Phase I of the study examined demographics, functional status, medical history, and disposition of 452 patients. In Phase II, 316 patients who had been discharged to their homes were administered questionnaires on living arrangements, functional abilities, and health services use. Excluding in-unit mortality, 71 percent of non-cancer patients over age 55 were returned to their homes and 82 percent of those patients remained there with a mortality rate not significantly higher than normal. Length of unit stay, age at admission, and discharge activities of daily living were related to discharge outcome but only current age was significantly related to placement stability. No factor influencing discharge placement was significantly related to mortality. Rates of reinstitutionalization for those at home were low; functional decline after discharge was not significant. (ABL)

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DISCHARGED ELDERLY NURSING HOME CARE UNIT PATIENTS: A FOLLOW-UP STUDY

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The primary objective of this study was to gather follow-up descriptive demographic, medical and functional data on elderly patients who have been discharged from the Memphis VAMC Nursing Home Care Unit (NHCU) and to relate these data to information available prior to discharge from the NHCU. These data were used to assess the relationship of various pre-discharge factors to current patient status and to assess post-discharge mortality, morbidity, and the stability of post-discharge placement. The study was conducted in two phases. During the first phase, computer file data were collected and analyzed on all non-cancer NHCU patients aged 55 and older who were discharged alive from the unit between March 1981 and March 1985. Pre-discharge factors were analyzed to determine relationships among these factors and discharge outcome. In the second phase, a telephone interview was conducted with patients who had been discharged to their home environments in order to obtain information regarding current living arrangements, functional status, and health services utilization since NHCU discharge. Results suggest that length of stay, age at admission, and functional abilities at discharge are significant factors in discharge disposition. However, only current age proved significant in placement stability. This unit returned 72% of patients discharge alive to their home environment. Post-discharge mortality for those patients returned home is 22% and post-discharge stability for those home dischargees who are still living is 82%. Data from this study provide needed follow-up information on discharged NHCU patients, and identify critical factors involved in patient stability and change following discharge.

Introduction

Discharge placement, stability of placement, and factors influencing placement and stability have been issues of major importance in recent studies of alternative levels of care, including rehabilitative and nursing home care. To date, the successes of rehabilitative nursing home units have been measured by their ability to return patients to their home environment in greater numbers than had traditional nursing home facilities. However, the question arises whether these dischargees remain at home or are reinstitutionalized within a short period of time. These issues of placement stability and reinstitutionalization rates are basic to the role of alternative levels of care, which seek to reduce health expenditures by reducing rates of reinstitutionalization (4,5).

In a controlled study of outcome and follow-up, Lefton and colleagues (2) found that patients managed on geriatric units were more independent, were discharged to a home setting and remained in the home setting in greater numbers than a control group. Teasdale and associates (7) attributed the superiority in placement outcome for geriatric rehabilitative units to the use of selective admission criteria. These criteria include the potential for rehabilitation based on diagnosis, ADL score, and the presence of family members willing to care for the patients.

Rubenstein and associates (6) present data on a one year follow-up of a randomized clinical trial testing the effectiveness of a geriatric evaluation unit (GEU). They found that the patients cared for on their evaluation and rehabilitation unit had a significantly increased survival rate and less use of acute care and long-term institutional services after one year of follow-up than similar patients receiving the usual hospital inpatient and outpatient

services.

Follow-up or predictive data on nursing home patients have not been as extensively examined. In a study by Keeler, Kane, and Solomon (1), length of stay for nursing home patients was different for the type of patient (convalescent versus chronic). Length of stay was related to the probability of home discharge and readmittance to a nursing home. A recent paper by Lewis, Kane, Cretin, and Clark (3) of patients admitted to skilled nursing facilities, showed that admission factors such as functional abilities, social supports, and ability to pay for care were related to immediate and subsequent outcomes. In light of this research, follow-up data on outcomes of patients from rehabilitation units are becoming increasingly important.

This research was conducted to examine outcomes of patients discharged from a rehabilitative nursing home care unit and assess the relationship of predischarge factors to placement and long term outcomes. The objectives of the study were to:

1. describe characteristics of patients discharged from this nursing home care unit;
2. examine the relationship of pre-discharge factors to placement outcomes; and
3. determine post-discharge morbidity, mortality, and placement stability for this group.

The Memphis VA Medical Center Nursing Home Care Unit (NHCU) is a 120 bed, specialized nursing facility designed to care for residents who require skilled nursing care and related medical services. These patients are not in need of acute hospital care nor do they require only custodial care. This facility is designed to take a comprehensive rehabilitative approach to the resident (veteran/patient) in need of extended care. The primary goals of the unit are to restore, maintain and promote health and function; and to minimize effects of disability through comprehensive rehabilitation.

The management and clinical structure of the unit are interdisciplinary. Patient management is conducted primarily by nursing personnel with extended clinical privileges. RN's and LPN's have the support of two clinical nurse specialists, two head nurses and a supervisor/director. The NHCU is also a major teaching site for the Division of Geriatric Medicine of the University of Tennessee. Physician coverage is provided by two full-time physicians who supervise a geriatric fellow, a medical resident, and students rotating on fourth year clinical electives. Unit staffing also includes two full-time social workers, four rehabilitation therapists, a psychologist and a clinical pharmacist. In addition, strong support is provided by speech and audiology, dentistry, podiatry, recreation and chaplain service, all of whom participate in weekly interdisciplinary team conferences.

Individuals are selected for admission to the unit primarily on the basis of who may benefit from a course of rehabilitation with the potential to return to the community. In addition, patients with malignancies are accepted for terminal care and for completion of radiation therapy. Admission is by application and all applications are reviewed by a screening committee comprised of NHCU staff - physician, psychologist, social worker, head nurse, director, a rehabilitation therapist, and a representative from Medical Administration. Information contained in the screening application includes: demographic characteristics; diagnosis and therapeutic regimen; ability to perform activities of daily living; usual social setting and potential to return to that setting; and financial resources.

In order to be considered for admission to the unit an applicant must meet the following requirements: needs skilled nursing care, supportive health

services and intermittent services of physicians; not in need of acute hospitalization; does not meet self-care criteria for admission to a VA domiciliary; and does not otherwise require intensive medical care (frequent clinical monitoring and laboratory studies).

Patients who are excluded from the unit: are stable and require permanent intermediate care services; have been previously institutionalized with no plan to return to a lower level of care; require intravenous therapy or oxygen; or exhibit behavioral problems that could constitute a hazard on an open unit.

Under these conditions a 95% occupancy rate has been maintained. Patients have accrued from several sources; however, 87% of the patients were referred to the unit from the acute care beds of the Memphis VA Medical Center. General hospitals referred 6% of the patient population and the remaining 7% were from specialty hospitals, community-based service organizations, nursing homes, and self-referral.

In summary, this unit differs from traditional nursing home care in its greater focus on rehabilitation and the selective nature of its population. The patient population is selected for the potential to return to their home environment and the ability to increase functional levels through rehabilitation. However, in a large number of cases, these individuals would have entered community nursing homes if this unit were not available.

METHODS

Phase I Methods

This research project consisted of two phases. Phase I was a retrospective analysis of patient file data. The NHCU maintains computerized information on each patient admitted. From this file, subjects were

identified. The focus of Phase I was on determining whether pre-discharge factors were related to placement outcome. Data on demographics, social, psychological and functional status, medical history, clinical course and disposition were examined and descriptive statistics were performed.

Subjects. Three classes of patients were not included in the study. Since the focus of the study was on discharge and follow-up, all patients who died while in the unit were excluded. In-unit mortality was 21% overall, with, as expected, more deaths in the older group of patients. Since older veterans are of major concern for the VA because they represent the largest group of service connected veterans, younger patients under age 55 were also excluded. Finally, due to the complexity of the disease process and the uncertain prognosis, cancer patients (both terminal care and radiation therapy patients) were not included. Table 1 lists the types and numbers of subjects excluded from the study.

Table 1. Identification of Subjects.

Noncancer patients	695
In unit deaths	(121)
Patients currently under age 55	(129)
Number of subjects included	452

Phase I identified 452 non-cancer patients over age 55, who were discharged alive from the unit between March 1981 and March 1985. The average length of stay for the total sample was 155 days and the average age at admission was 69 years. Subjects can be divided into six major diagnostic groupings. Table 2 shows the distribution of patients by diagnosis.

Table 2. Non Cancer Diagnostic Groupings

Non-Cancer Diagnostic Groupings	N	% of Sample
1. Cerebrovascular	174	38.5
2. Other Neurologic	41	9.1
3. General Medicine and Surgery	118	26.1
4. Lower Extremity - General	16	3.5
5. Lower Extremity - Amputee	36	8.0
6. Lower Extremity - Fracture	66	14.6
(Missing)	(1)	(.2)
Total	452	100.0

Outcome Variables. Disposition at discharge was determined for all non-cancer patients currently over age 55. Four discharge categories were identified; home, community nursing home, general ward, and other VA hospitals. The category "home" included individuals who at admission may have been living alone but were discharged to live with relatives. This category reflects "independent living" in the sense that the individual is cared for by self, family, or friends and does not specifically mean a return to a former level of function. The category "community nursing home" includes both board and care homes and community nursing facilities. Patients discharged to board and care homes represent two-thirds of this group. Although these two groups are different in nature, for the purposes of this study they were combined in a category to reflect dependent living. Table 3 lists discharge dispositions for the study sample.

Table 3. Discharge Disposition of Non-Cancer-Patients, 55 Years of Age and Older.

	Number	Percent
Home	325	71.9
Community Nursing Home	105	23.2
General Ward	16	3.5
Other VA Hospital	6	1.3
Total	452	100.0

Table 3 shows that the majority of patients were discharged home, 23.2% were discharged to institutional care, and a very small group were returned to a general ward at this VA hospital or were discharged to other VA hospitals. This latter group comprised only 4.8% of the sample and were excluded from further analysis.

Pre-discharge Variables. Age at admission, length of unit stay and functional abilities at admission and discharge were analyed. Patient records contained information on functional abilities in two formats. For many patients discharged prior to 1983 the ability to perform activities of daily living was recorded as able, with help, or unable. Granger ADL scores later replaced this format. In order to include ADLs in descriptive analyses, Granger ADL scores were converted to 0-5 (able), 6-25 (with help), and 26-45 (unable) to perform activities of daily living. ADL scores were analyzed by Chi square analysis for two groups of patients, those who were were discharged "home" and those who were discharged to a "community nursing home". T-test for analysis of variance was used to analyze differences between "home" dischargees and "community nursing home" dischargees for two variables, age at admission and length of unit stay.

Phase II Methods

In the second phase of this project only those patients identified as having been discharged home were contacted by phone or by mail questionnaire.

Information was gathered on 316 of the 323 patients discharged home. The average length of time from discharge date to follow-up contact was two years with a range of six to fifty-one months. Data on current living arrangements, self-reported functional abilities, and use of health services were obtained from the patient or a close family member. Discharge stability was determined and variables such as age at admission, current age, length of unit stay, diagnostic grouping, and discharge ADL were analysed by Chi square or t-test to determine their relationship to placement stability. Morbidity, mortality, and rates of rehospitalization were also examined as outcome variables.

RESULTS

Phase I. The focus of Phase I was on determining whether pre-discharge factors are related to discharge placement. Two variables were found to be significant by t-test. Length of stay and age at admission showed significant differences between patients who returned home and patients who were placed in an alternative setting (Table 4).

Table 4. T-Test for Discharge Disposition (Home vs. Community Nursing Home).

Length of Stay (Days)	Mean ± SEM	Test Value	Sig. of Dif.
Home	129.3 ± 5.1	T = 5.46	P < .001
CNH	247.8 ± 21.2		
Age at Admission			
Home	67.9 ± 0.5	T = 3.89	P < .001
CNH	72.1 ± 1.0		

Mean length of stay for those discharged home was almost half that of patients discharged to nursing home care, and those discharged home were four years younger on the average than those discharged to nursing home care. As has often been suggested for older patients, diagnostic group was not significant for discharge placement. Although some variability was seen in

age at admission and length of stay among diagnostic groups, placement outcome was not related to diagnostic category. Table 5 and Table 6 show average length of stay and age at admission for each diagnostic category.

Table 5. Mean Length of Stay (In Days) by Diagnostic Group.

	Mean	SD	N
1. Cerebrovascular	159.9	143.4	174
2. Other Neurologic	190.5	193.2	41
3. General Medicine and Surgery	116.7	106.1	118
4. Lower Extremity - General	244.9	236.5	16
5. Lower Extremity - Amputee	203.6	139.6	36
6. Lower Extremity - Fracture	142.4	100.0	66
Total Sample	155.3	141.3	451

Table 6. Mean Age at Admission by Diagnostic Group.

	Mean	SD	N
1. Cerebrovascular	65.2	6.9	173
2. Other Neurologic	68.4	9.6	41
3. General Medicine and Surgery	72.8	11.4	118
4. Lower Extremity - General	66.1	5.8	16
5. Lower Extremity - Amputee	68.6	9.2	36
6. Lower Extremity - Fracture	73.0	11.1	66
Total Sample	69.0	9.9	450

Tables 5 and 6 show the variabilty in length of stay and age at admission by diagnostic groups. General medicine and surgery and lower extremity-fracture each had higher ages at admission and shorter lengths of stay than other diagnostic groups. However, correlational analysis of age at admission by length of stay did not reach significance.

Functional abilities at admission and discharge were also analyzed. Admission ADL was not related to outcome because there was considerable improvement in ADL performance from admission to discharge for the entire sample. Table 7 shows changes in ADL from admission to discharge.

Table 7. Admission to Discharge ADL Score Change.

Admission ADL	Able	With Help	Unable	N
Able	62	--	--	62
With Help	103	55	4	162
Unable	42	49	27	118
N	207	104	31	342

As shown, there were 118 persons "unable to perform activites of daily living" at admission but only 31 recorded as "unable" by discharge. At admission only 62 persons were recorded as "able" whereas by discharge 145 patients had improved to a level of functioning that enabled them to perform activities of daily living without help.

For discharge ADL, however, differences were observed between those patients discharged home and those who were placed in an alternative setting. Chi square analysis suggested significant differences but had an expected frequency of less than five in one cell. Table 8 shows discharge ADL score for each group.

Table 8. Discharge ADL by Discharge Disposition (Home vs. Community Nursing Home).

	Able (%)	With Help (%)	Unable (%)	N
Home	177 (68.3)	64 (24.7)	18 (6.9)	259
CNH	29 (36.2)	38 (47.5)	13 (16.3)	80
N	206 (60.0)	102 (30.1)	31 (9.1)	339

Patients who were discharged home were more likely to be able to perform activities than those who were discharged to an alternative setting. Only 36.2% of those discharged to an institutional care setting were "able" whereas 68.3% of those discharged home were recorded "able". Those who did not return home were also more likely to be "unable" than their counterparts who had returned home.

Phase II

The focus of the second half of the study was on discharge stability. VA patient records, phone interview and mail survey identified 71 (22%) deaths in this sample. The average length of time from discharge home to death was approximately fourteen months. Table 9 shows the number of patients who have died since their discharge home, classified according to diagnostic category.

Table 9. Mortality by Diagnostic Group for Patients Discharged Home.

	N	D/C Home (%)	Deceased (%) After D/C
1. Cerebrovascular	174	126 (72.4)	27 (21.4)
2. Other Neurologic	41	21 (51.2)	3 (14.3)
3. General Medicine and Surgery	118	85 (72.0)	21 (24.7)
4. Lower Extremity - General	16	11 (68.8)	1 (9.1)
5. Lower Extremity - Amputee	36	30 (83.3)	10 (33.3)
6. Lower Extremity - Fracture	66	50 (75.8)	9 (18.0)
Total Population	451	323 (71.6)	71 (21.9)

Lower extremity amputees had the highest mortality rate (33%), coupled with the highest rate of home discharge (83%). T-test analysis for length of stay and age at admission showed no significant difference between those veterans who had died since discharge and those who are still living. However, some variation between these two groups was seen in their functional abilities at discharge as shown by Table 10.

Table 10. Discharge ADL'S for Patients Discharged Home - Deceased vs. Living.

	Able	With Help	Unable	N
Deceased	66.7 (%)	17.5 (%)	15.8 (%)	57
Living	68.3	27.2	4.5	200
N	176	65	18	259

Patients who had died since their discharge home were more likely to have been recorded as "unable" to perform activities of daily living than those who

were still alive (15.8% versus 4.5%).

Phone interview and mail survey data showed that 82 percent of those veterans discharged home and still living are living at home. Table 11 shows current living arrangements.

Table 11. Current Living Arrangements of Patients Discharged Home.

	Number	Percent
Home	202	82.4
Community Nursing Home	25	10.2
General Ward	10	4.1
Memphis NHCU	8	3.3
	245	100.0

Only 10% of those patients discharged home and still living have permanently moved to a community nursing facility. At the time of the follow-up interview, 4% were currently in the general ward of the VA and 3% were back in this unit for additional rehabilitation. The average length of time from discharge date to date of relocation was 15 months. Table 12 shows t-test results for the two factors that were related to discharge placement outcomes.

Table 12. T-Test for Ultimate Placement (Home vs. Community Nursing Home).

Length of Stay (Days)	Mean ± SEM	Test Value	Sig. of Dif.
Home	124.6 ± 6.3	T = .33	P < .192
CNH	151.2 ± 19.1		
Present Age			
Home	68.8 ± 0.6	T = 2.68	P < .010
CNH	74.1 ± 1.9		

T-test analysis for length of stay, which was related to discharge outcome, showed no significant difference between those veterans who have remained at home versus those who have moved to an alternative setting

Table 15. Discharge ADL by Self-Reported ADL.

	Self-Reported ADL			
Discharge ADL	Able	With Help	Unable	N
Able	61	44	-	105
With Help	13	20	5	38
Unable	1	3	2	6
N	75	67	7	149

These data show that, based on self-report, two-thirds of this group have experienced no change or have improved in abilities since discharge.

Self-reported hospitalizations range from one to ten admissions since discharge, with 63% reporting that they had not been hospitalized since they left the NHCU. However, these data are complete for only 76% of those currently living at home.

Summary

This paper has presented data on a sample of patients (non-cancer, over age 55) discharged from the Memphis VA NHCU, a rehabilitative nursing home care unit.

Table 16 shows patients currently living at home by diagnostic group.

Table 16. Patients Admitted to the Memphis VAMC/NHCU Currently Living at Home (By Diagnostic Group).

	Number	Percent
1. Cerebrovascular	82	47.3
2. Other Neurologic	14	34.1
3. General Medicine and Surgery	50	42.4
4. Lower Extremity - General	7	43.8
5. Lower Extremity - Amputee	16	44.4
6. Lower Extremity - Fracture	33	50.0
Total Sample	202	44.7

When the in-unit mortality rate of 21% is included, overall home placement and rate of stability for non-cancer patients over 55 is 45%. However, if in-unit mortality is excluded the NHCU has returned 71% of its non-cancer patients over age 55 who were discharged live to their home environment. Further, 82% of those discharged home and still living have remained there. Post-discharge mortality was 22% for those discharged home. This mortality rate is not significantly higher than would be expected for a sample of males over age 65.

Length of unit stay, age at admission, and discharge ADL were related to discharge outcome. However, only current age proved significant in placement stability. None of the factors influencing discharge placement proved significant for mortality, although some variability occurred among diagnostic groups.

Preliminary analysis of data obtained on the follow-up questionnaire indicate that rates of reinstitutionalization for those currently living at home are low. Self-reported ADLs suggest that functional decline since discharge is also not significant for this group of older veterans.

REFERENCES

1. Keeler E, Kane R, Solomon D. Short-term and Long-term residents of nursing homes. Med Care 1981; 19:363-369.

2. Lefton E, Bonstelle S, Frengley J. Success with an inpatient geriatric unit: a controled study of outcome and follow-up. J Am Geriatr Soc 1983; 31:149-155.

3. Lewis MA, Kane R, Cretin S, Clark V. The Immediate and Subsequent Outcomes of Nursing Home Care. AJPH 1985; 75:758-762.

4. Rubenstein L, Abrass I, Kane R. Improved care for patients on a new geriatric evaluation unit. J Am Geriatr Soc 1981; 29:531-536.

5. Rubenstein L, Wieland D, English P, Josephson K, Sayre J, Abrass I. Sepulveda VA geriatric evaluation unit: data on four-year outcomes and predictors of improved patient outcome. J Am Geriatr Soc 1984; 32:503-512.

6. Rubenstein L, Josephson K, Wieland D, English P, Sayre J, Kane R. Effectiveness of a geriatric evaluation unit. NEJM 1984; 311:1664-1670.

7. Teasdale T, Shuman A, Snow E, Lucki R. A comparison of placement outcomes of a geriatric cohorts receiving care in a geriatric assessment unit and on general medicine floors. J Am Geriatr Soc 1983; 31:529-534.